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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/302,409 04/30/99 SHAUGNESSY

D 1375A1

EXAMINER

IM22/0703

PPG INDUSTRIES INC
INTELLECTUAL PROPERTY DEPARTMENT
ONE PPG PLACE
PENNSYLVANIA PA 15272

MCNEIL, J

ART UNIT

PAPER NUMBER

1775

DATE MAILED:

07/03/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/302,409

Applicant(s)

Shaughnessy et al

Examiner

Jennifer McNeil

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on Apr 12, 2001

2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 4-36 and 38-43 is/are pending in the application

4a) Of the above, claim(s) _____ is/are withdrawn from consideration

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 4-36 and 38-43 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirements

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. _____.
- ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☐ Notice of References Cited (PTO-892)

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) ☐ Notice of Informal Patent Application (PTO-152)

17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 7

20) ☐ Other:

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DETAILED ACTION

Claim Objections

1. Claim 24 is objected to because of the following informalities: In line 22, should “-” be -- ±--? . Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 12, 15, 18, 22, and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear what the dielectric film of the dielectric layer comprises. Specifically, the claims state “dielectric layer comprises a zinc oxide film; a zinc oxide, tin oxide film or a zinc stannate film...”. Is the film zinc oxide? Is it tin oxide or zinc stannate? Please refer to MPEP 2173.05(h) for proper Markush language.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 4, 7, 9, 25, 28, and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Depauw et al (GB 2311540A) (Glaverbel). Depauw et al teach a coated sheet for use in a laminated assembly including a transparent substrate carrying two metal layers formed of silver and three layers of a transparent dielectric material. The dielectric material includes oxides such as tin oxide, zinc oxide, silicon nitride, or a mixture thereof or a complex of zinc stannate. Each dielectric layer can include more than one of these materials and each layer can be a composite layer formed of successive subsidiary layers of different compositions. A combination of tin oxide and zinc oxide is generally advantageous, whether in admixture or in successive sub-layers. The coated substrate also has a thin layer of a sacrificial metal, such as titanium, provided above and in contact with each metal (silver) layer. Table A shows the successive layers (films) which may be used in forming the dielectric layers of the laminate.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 5, 6, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Depauw et al (GB 2311540A). Depauw et al teach a coated substrate as discussed above and discloses that the successive layers or films which make up the three dielectric layers of the laminate may include tin oxide, zinc oxide, and zinc stannate. Depauw et al further teaches that it is advantageous to use a mixed oxide of tin and zinc. Depauw et al do not give specific examples wherein a zinc stannate is next to a mixed oxide of tin and zinc. However, absent a showing of criticality, since Depauw clearly teaches that these materials may be used in making the successive layers, it would have been obvious to one of ordinary skill in the art at the time of the invention to use these materials in succession.

8. Claims 8, 10-24, 26, 27, 29, 30, 32-36, and 39-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Depauw et al (GB 2311540A) in view of Gillery (US 4,610,771). Depauw et al disclose a coated sheet as discussed above but does not teach a preferred zinc/tin ratio. Gillery teaches a film composition comprising multiple layers, preferably a highly reflective film such as gold, silver, and copper sandwiched between metal oxide layers. The anti-reflection layer comprises a metal oxide, which is preferably zinc stannate. The zinc stannate film has a composition of preferably 10-90 percent zinc and 90-10 percent tin, where a zinc/tin ratio from 40:60 to 60:40 is preferred. At the time the invention was made it would have been obvious to one of ordinary skill in the art to use the zinc stannate composition of Gillery in the laminate of Depauw et al to produce a laminate with higher transmittance.

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Depauw also does not disclose the exact thickness ranges for the layers. It would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the thickness of the ranges to achieve the desired transmittance, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involved only routine skill in the art (*In re Aller*, 105 USPQ 233).

Response to Arguments

9. Applicant's arguments with respect to claims 4, 7, 9, 25, 28, and 31 have been considered but are moot in view of the new ground(s) of rejection.

Applicants argue that Depauw et al do not teach the use of a zinc oxide, tin oxide film or a zinc stannate film as an enhancing film. The intended use of the film does not structurally limit the film Depauw et al clearly teach that the dielectric layers (successive films) may be made of one or a mixture of these oxides and further teaches the advantage of using a mixed zinc and tin oxide (page 7, lines 24-27). Depauw teaches the incorporation of multiple layers (films) in the three dielectric layers which separate the silver layers.

Conclusion

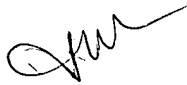
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer McNeil whose telephone number is (703) 305-0553. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones, can be reached at (703) 308-3822.

When filing a fax in Group 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communications with the PTO that are not for entry into the file of this application. This will expedite processing of your papers. The fax number for this Group are (703) 305-3599 for "Official" faxes and (703) 3055436 for "Unofficial" faxes.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, whose telephone number is (703) 308-0661.



Jennifer McNeil
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DEBORAH JONES
SUPERVISOR, PATENT EXAMINER